User Requirements

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Outline

- Splinter Group Reports - Core Missions
- User's role in mission definition
- Establish proper structure
- Transition challenges
- Conclusion

Splinter Group Reports from Users

- RBM mission duration is too short
  - should push to 5 year goal not 2 years
- Role of debris avoidance for ISS was not mentioned
- Real time data essential. If acquired from local receiving stations, might not impact cost of mission, because would not be continuous coverage
- User community should be part of ground system design - of both centralized and real-time ground receivers. Selection of data types, processing, etc. has impact on design.
- Ion composition needed in Radiation Belt Mappers: H+ and O+ affect system in different ways
- Atlantic Anomaly instrument planned on Ionospheric Mappers - need to be sure that this region does not fall between the cracks
- Users do not have good representation on all core missions
- SDO did not have representation for “Irradiance” needs

Users' role in mission definition

- Users' requirements should be integral part of Program definition
- Several representatives from user community should be on definition teams
  - Applies equally to each mission, to Theory and Modeling, and to Data Analysis
- User participation is essential to give credibility to the Program as "Pasteur" Science
- Establish a User Oversight Committee (similar to what exists for Space Station)
- User sign-off required for mission approval
- User requirements should specify which models are to be treated as deliverables

Transition to Operation and Tailored Products

- Examples include GPS error map, specific satellite charging effects, scintillation tool
- "NASA's responsibility stops at spacecraft", meaning, for example, that LWS mission will provide particle counts hitting s/c, but will not provide support for calculating particle impact on specific s/c
  - Implies that these applications will need to be funded from other sources. But LWS mission should provide rationale for obtaining funds
  - Several organizations stressed that LWS team role in educating their organizations is important.
- Transition is expensive and time consuming
- Knowledge obtained from LWS will remain useless for society as long as this transition has not taken place
- Transition needs to be planned now
- Suggest the formation of a Users Consortium to aid in this transition to avoid duplication and leverage from each other
- Consortium should include NOAA and AF rapid prototyping centers, AFRL, NASA's groups, industry reps

Synergy and feedback between user and science communities

- Need to increase dialog between the two communities

  research <--> applications
- User needs and system failures are not always reported
  - Example: GPS receiver thrown away by soldier ignorant of Space Weather effects
  - No formal reporting procedures exist
  - Need to quantify economic impact
- Note that term “user” is used for all aspects, from forecast centers, to industry, satellite builders, soldier from the field, cellular phone user, to programs that support users
- Some users are in the “black” world - challenge to reach them
- Need for users to define today’s needs, as well as to project needs 10 years from now
  - There was a discussion of a user requirements document and two volunteers came forth to help with it. Group felt that increased dialog with science researchers would help with 10-year projection.

Conclusions

- Users should be integral part of mission definition
- Formal structure should include
  - User oversight committee
  - User consortium
  - Several users on each Definition Team
- Transition to operation and tailored products should be planned now
- Need to increase dialog between the 2 communities
- Additional comments
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